

Appendix D

The MPU Exemption and California's Equipment Exemption



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March 1, 2017

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THE MPU EXEMPTION AND CALIFORNIA'S EQUIPMENT EXEMPTION

Dear Mr. Rendleman:

This letter addresses questions you raised in a letter, dated March 18, 2016. Specifically, the Ingenium Group, LLC (Ingenium) is requesting the Department of Toxic Substances Control (DTSC) confirm that used canisters containing spent solid media (a.k.a. used desulfurization units) that otherwise exhibit a hazardous waste characteristic are exempted from hazardous waste regulations as a Manufacturing Process Unit (MPU) under California Code of Regulations, title 22, section 66261.4, subsection (c) or as equipment that will be cleaned for continued use under Health and Safety Code, section 25143.14.

Ingenium's question may be summarized as follows: "a manufacturer of alternative energy products sells and provides energy producing units to companies..." that want to use this technology. DTSC understands these energy producing units produce electricity through an electrochemical process that occurs within the units. As part of its process, the energy producing unit(s) pipe natural gas through the desulfurization units in question, which contain absorbent materials (i.e., solid media) that remove sulfur contained in the natural gas. Over time, the solid media in the desulfurization units or canisters reach their capacity and need to be replaced. At that time the canisters are removed from the energy producing units and are sent to Ingenium's offsite facility for emptying, cleaning and subsequent reuse. At Ingenium's offsite facility the used canisters are emptied and the spent media is prepared for final disposition. Spent media that is determined to contain metals is sent for recycling while spent media determined to be non-recyclable is managed as hazardous waste for its benzene content (D018). All emptied canisters are cleaned and sent to another facility "to be re-packed with new media and put back into the supply chain."

Ingenium is requesting a determination that these used canisters containing spent media are MPUs because the hazardous waste within any given canister is generated from the manufacturing of electricity. It is Ingenium's contention that although the canisters

themselves do not necessarily produce the electricity they are a part of the manufacturing process that produces electricity as a product which then qualifies the spent media canisters as MPUs. Additionally, Ingenium also determined that the spent media canisters (as MPUs) can be disconnected from the energy producing unit and sent offsite (to Ingenium's facility) for cleaning and reuse and still maintain its exempt status as an MPU as long as the cleaning and removal is done within 90 days from the time the spent media canisters are temporarily removed from service. To substantiate this determination, Ingenium included excerpts from the United States Environmental Protection Agency's (US EPA's) Federal Register [45 FR 72025] that considers offsite transportation of MPUs and provided a DTSC interpretation letter in its request that extended the MPU exemption to tanks transported offsite for cleaning. Although the canisters themselves are not tanks it is Ingenium's contention that the canisters are similar to tanks, in that the integrity of the canisters are still intact (i.e., when disconnected the canisters remain sealed and contain the spent media within to the extent that release is unlikely) which is the rationale DTSC provided for allowing tanks to be shipped offsite and still be exempt as MPUs.

To ensure consistency, it is also worth mentioning DTSC has located an active inquiry on the exact question of whether a desulfurization unit in an electricity producing process is covered under the MPU exemption. The history below originates from an equipment/process provider (Bloom Energy). The similarity of the issues between the Bloom Energy inquiry and the Ingenium inquiry allow for the issues to be addressed together. The history of the Bloom Energy inquiry as known to DTSC is as follows:

1. There were meetings in December 2014 and January 2015 with Delaware Department of Natural Resources (DNREC – the equivalent of DTSC) where staff answered the question that the units in question were not covered under the MPU exemption (for Bloom Energy).
2. On March 12, 2015 – Bloom Energy's attorney asked the Secretary of the Delaware DNREC for a determination of the issue and submitted extensive technical and regulatory information.
3. On June 3, 2015, the Secretary of the DNREC issued a determination to Bloom Energy that their units did qualify under the MPU exemption; and had a concurrence from the Delaware Attorney General's Office to that effect.
4. On September 8, 2015, US EPA Region III issued a letter to the Delaware Secretary of the DNREC stating that Delaware's interpretation was incorrect and less stringent than Resource Conservation Recovery Act (RCRA).
5. On September 30, 2015, Bloom Energy's attorney sent a letter to US EPA Region III asking them to reconsider their interpretation sent to Delaware's DNREC that the units do not qualify for the MPU exemption.
6. On March 30, 2016, Bloom Energy sent a letter to the US EPA General Counsel in Washington DC asking for consideration of the issue.

7. On September 29, 2016, US EPA Region III issued a letter to the Delaware Secretary of the DNREC affirming the September 8, 2015 interpretation.
8. On October 3, 2016, the Director of the US EPA Office of Resource and Conservation Recovery sent a memorandum to all of the RCRA Regions I-X affirming US EPA's interpretation of the MPU exemption.
9. On October 27, 2016, the DNREC sent a letter to Bloom Energy rescinding the DNREC June 3, 2015 interpretation letter.

In the meantime:

1. On March 18, 2016, Ingenium which is a waste disposal and transportation company that also provides compliance services, asked DTSC to consider the same question but provided less information than the prior correspondence that was sent to Delaware DNREC and US Federal EPA by Bloom Energy.

DTSC has reviewed Ingenium's request and rationale for making such determinations and does not consider spent media canisters to be MPUs or exempted equipment that will be cleaned and reused. DTSC's rationale is provided in the attachment to this letter.

DTSC considers the used solid media within the canisters to be spent material and hazardous waste when sent for cleaning and reuse. Thus, used canisters once removed from an energy producing unit must be managed as hazardous waste when generated, accumulated and stored onsite. When shipped offsite the used canister must be transported using a Uniform Hazardous Waste Manifest and a registered hazardous waste transporter in California.

Thank you for your questions and if you have any additional questions or need further clarification regarding the content of this letter please feel free to contact me at (916) 322-8677 or via email at Kevin.Sanchez@dtsc.ca.gov.

Sincerely,



Kevin Sanchez
Senior Environmental Scientist
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Attachment

cc: See next page

Mr. W. Scott Rendleman, MS, CHMM

March 1, 2017

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ATTACHMENT

The MPU exemption and California's equipment exemption

The MPU exemption

The Manufacturing Process Unit (MPU) exemption is found in California Code of Regulations, title 22, section 66261.4(c). This subsection, in its entirety, exempts product and raw material storage tanks and pipelines, transport vehicles (e.g., tank trucks), vessels (e.g., ships), MPUs and associated non-waste treatment MPUs in which hazardous wastes are generated. The exemption is necessary because it was never the United States Environmental Protection Agency's (U.S.EPA's) nor the Department of Toxic Substances Control's (DTSC's) intent to regulate such units as hazardous waste storage tanks because the hazardous wastes within them "are contained against release...and the risks posed...are very low and are only incidental to the risks posed by the valuable product or raw material with which they are associated" [October 30, 1980; 45 FR 72025]. Thus, under the exemption, hazardous wastes within such units remain exempt until one of two things occurs:

- the hazardous waste is removed from the unit in which it was generated or
- the hazardous waste remains in the unit for more than 90 days after the unit is removed from service either temporarily or permanently, or if the unit ceases to be operated

DTSC interprets this exemption as applying only to units that are a part of or associated with a manufacturing process or service. Thus an MPU may include tanks that are used to hold raw material or product, or process units such as distillation columns or flotation units, but each must be part of a manufacturing process to be exempt under this particular provision [October 30, 1980; 45 FR 72025].

Is electricity a product?

The United States Department of Labor (USDOL) categorizes or defines industries or industrial processes based on their activities. USDOL defines the manufacturing sector and also identifies subsectors for the purposes of categorizing the sector in question (using the North American Industry Classification System (NAICS)) none of which list the production of electricity as part of the manufacturing sector. Conversely, USDOL identifies industries engaged in the provisions of utility services including electric power to be a part of the utilities sector, which is a subsector of the service sector.

In the case of Pacific Gas and Electric Company, 271 B.R. 626, United States District Court, N.D. California (2002) the court discussed whether electricity is a product or a service. While the court stated that electricity has consistently been found to be a product and stated that there is no bright line between when the electricity transitions from a service to a product; the court also found that electricity that is metered at a consumer's premises will be a product.

"The court here finds that the U.C.C. does apply. Many of the cases tackling this question stem from the products liability realm, but California courts have

consistently found that electricity is a product or good. See, e.g., *Pierce v. Pacific Gas & Elec. Co.*, 166 Cal.App.3d 68, 82, 212 Cal.Rptr. 283 (Cal.Ct.App.1985) (“As the Supreme Court of Wisconsin aptly put it, ‘The distribution might well be a service, but the electricity itself, in the contemplation of the ordinary user, is a consumable product.’”) (citing *Ransome v. Wisconsin Elec. Power Co.*, 87 Wis.2d 605, 610, 275 N.W.2d 641 (Wis.1979)); *Mancuso v. Southern California Edison Co.*, 232 Cal.App.3d 88, 100, 283 Cal.Rptr. 300 (Cal.Ct.App.1991) (“We also reject Edison's claim that electricity is solely service and not a product. This issue was put to rest in California by *Pierce*... Electricity which has passed through the consumer's meter has been sold and delivered. It is in the stream of commerce. It has been marketed. Such a transaction constitutes the sale of a product ...”); *Baldwin–Lima–Hamilton Corp. v. Superior Court*, 208 Cal.App.2d 803, 819, 25 Cal.Rptr. 798 (Cal.Ct.App.1962) (“Electricity is a commodity which, like other goods, can be manufactured, transported and sold.”)

“Courts in other states have similarly found that electricity is a good for purposes of the U.C.C. See, e.g., *Grant v. Southwestern Electric Power Co.*, 20 S.W.3d 764, 771 (Tex.App.2000) (“The Texas Supreme Court has ruled that: ‘Electricity is a commodity, which, like other goods, can be manufactured, transported and sold.’ As the Houston Court of Appeals stated, ‘While the distribution of the electricity through a system of towers, poles, and wires may well be considered a service, the electricity itself is a consumable product.’ As such, the sale of electricity comes under the umbrella of the Uniform Commercial Code.”) (citations omitted); *Helvey v. Wabash County REMC*, 151 Ind.App. 176, 179, 278 N.E.2d 608 (Ind.Ct.App.1972) (holding electricity is a good under the U.C.C. as “[i]t is necessary for goods to be (1) a thing; (2) existing; and (3) movable, with (2) and (3) existing simultaneously. We are of the opinion that electricity qualifies in each respect. Helve says it is not movable and in this respect we do not agree, if for no other reason than the monthly reminder from the electric company of how much current has passed through the meter. Logic would indicate that whatever can be measured in order to establish the price to be paid would be indicative of fulfilling both the existing and movable requirements of goods.”).⁸”

“Furthermore, the California products liability cases have generally determined that electricity is a product, and by analogy, a good, only at the point at which “the electricity is actually in the ‘stream of commerce,’ and expected to be at marketable voltage. In most cases this will mean the electricity must be delivered to the customer's premises, to the point where it is metered, although the many variations in electrical systems prevent our drawing a ‘bright line’ at a particular point.” *Pierce v. Pacific Gas & Electric*, 166 Cal.App.3d 68, 84, 212 Cal.Rptr. 283 (Cal.Ct.App.1985); see also *Fong v. Pacific Gas & Electric*, 199 Cal.App.3d 30, 38, 245 Cal.Rptr. 436 (Cal.Ct.App.1988) (“[E]lectricity does not become a product once it is delivered to plaintiffs' premises, i.e., the moment the wires cross plaintiffs' property line. Instead, the test is whether the electricity has been metered.”) (citation omitted). The electricity at issue here clearly meets that standard. It passed from PG & E's lines to Puget's, was metered, was available

to Puget in a voltage marketable from one power company to another and was immediately usable by Puget. It would be a product for strict liability purposes. It is by extension a good. Cf. *Singer Co., Link Simulation Systems Div. v. Baltimore Gas and Elec. Co.*, 79 Md.App. 461, 558 A.2d 419, 424 (1989) (holding electricity would not be considered a good when “it has not yet been converted into a useable state of lower voltage by passing through a meter into a customer's home or place of business, [as it] is not the refined product that the customer intends to buy”).”

The Ingenium inquiry did not provide specifics that would allow DTSC to determine whether the electricity generated falls into the product or service category; therefore, DTSC reviewed the Bloom Energy website (<http://www.bloomenergy.com/> last visited 9/8/2016). Bloom Energy describes their product as:

“Distributed generation (also known as distributed energy) refers to power generation at the point of consumption. Generating power on-site, rather than centrally, eliminates the cost, complexity, interdependencies, and inefficiencies associated with transmission and distribution. Like distributed computing (i.e. the PC) and distributed telephony (i.e. the mobile phone), distributed generation shifts control to the consumer.”

Additional review of the Bloom Energy website reveals options where a consumer may purchase or lease equipment, with Bloom Energy maintaining control and servicing, without the customer having to make a capital purchase and take ownership, only paying for electricity that is produced based on a kilowatt per hour (kWh) billing. This description appears to describe a service similar to an electric company with the variation that the equipment is located closer to the point of generation with lower voltage generation and distribution. However, the information on Bloom Energy's web site also seems to allow for a capital purchase by a company that might allow the generation of electricity to fall into the product category.

Realizing that more information may be needed to determine whether the electricity generation is actually a manufacturing process, the limitations of California case law, and the possible variations in interpretations throughout the states, DTSC will address whether or not the canister is an MPU as an “associated non-waste treatment manufacturing process unit,” presuming the energy producing unit is a manufacturing process.

Is a used desulfurization unit an associated non-waste treatment MPU?

California Code of Regulations, title 22, section 66261.4(c) was meant to exempt units that are associated with or part of a manufacturing process however it was not meant to exempt all units (e.g., those units that solely manage wastes). To make such distinctions, DTSC further interprets California Code of Regulations, title 22, section 66261.4(c) to exempt residual material generated in units associated with or part of the manufacturing process that otherwise hold valuable product or raw materials. Thus, although it is reasonable to consider the canister containing solid media to be such a unit during its

initial use (i.e., the canister contains residual material but still holds product in the form of unused media), it is not when the canister is removed because the canister no longer contains valuable product and thus is considered spent. Ingenium states the following, “when the media has reached its capacity, the canister is removed, a new canister is installed, and the old canister is sent to an offsite, second party facility for cleaning.” A material that can no longer be used effectively (i.e., the material cannot be used for its originally intended purpose without regeneration or further processing) is considered a “spent material.” (Cal. Code Reg, tit. 22, sec. 66260.10)

As such, since the solid media in the canister is spent and the canister no longer contains valuable product or raw material DTSC does not consider it an MPU, including when used to transport such wastes. Instead, the removed canister is considered a container holding hazardous waste and the used solid media within it is a “spent material” being sent for reclamation. Thus once the canisters are determined to have reached their capacity, and are removed from the energy producing units, they must be managed as a hazardous waste. [See US EPA letter - EPA RCRA Online (RO) 12790]

Additionally, US EPA has clarified that the MPU exemption does not apply to units that are stationary during operation if those units are disassembled for cleaning offsite. Based on the above, the spent media canisters are removed from the energy producing units and are subsequently sent offsite for cleaning. As such, when viewed as “associated non-waste treatment manufacturing process units” the spent media canisters are not MPUs because “the incentive to maintain the units integrity to prevent leaks or unintended release...is...reduced when...taken out of operation” [See US EPA RCRA/SUPERFUND/OUST Hotline Monthly Report question from May 1990, RO 13374].

Ingenium stated in its letter that the issue of offsite cleaning has been interpreted inconsistently, citing two specific examples – one concerning US EPA allowing transport vehicles and vessels to be moved offsite for cleaning and the other concerning a previous DTSC interpretation, regarding tanks and the offsite cleaning of those units. Regarding vehicles and vessels, DTSC finds US EPA’s statement reasonable when applied to the activity in question, specifically because the exemption is explicitly written to cover vehicles and vessels that generate hazardous wastes during the transport of products in tank-trucks and cargo ships, thus any facility that does the subsequent cleaning would be an offsite facility [October 30, 1980; 45 FR 72025]. Regarding DTSC’s previous interpretation, DTSC considers all its interpretations as site specific and thus process specific and in this particular instance, the MPU is applicable to tanks only, accordingly California Code of Regulations, title 22, section 66261.4(c) does not apply to spent media canister containers which do not meet the definition of a tank [DTSC letter (provided in your March 18, letter) – December 17, 1992, subject Erikson Inc., Enforcement Action and the Regulation of USTs].

Is the used desulfurization unit exempt as equipment that will be cleaned for continued use?

Health and Safety Code, subsection 25143.14(a) states the following: “residues that are removed from equipment for the purpose of cleaning the equipment for continued use

are subject to regulation under this chapter only after the residues have been removed from the equipment.” DTSC interprets this particular provision to provide a clarification of the point of generation (POG) for certain generated/produced hazardous wastes. First, the equipment containing a hazardous waste residue is not required to be managed as hazardous waste just because it holds a residue of certain wastes. Secondly, a generator is not required to obtain authorization (e.g., get a permit from DTSC) to remove (or clean out) the hazardous waste residue from the equipment. This provision of law clarifies that the residue is hazardous waste when it is removed provided that the equipment is reused.

The exemption applies only to equipment that contains residues. DTSC sees the word residue as meaning something that remains after a part is taken, separated, or designated or after the completion of a process or a small or de-minimis amount of material left behind. Removed canisters that are essentially full of spent solid media may not be managed under the equipment exemption because they are not holding just a residue. Instead, and as was stated above when discussing the MPU exemption, DTSC considers the spent media canister being sent to Ingenium’s offsite facility to be a spent material being reclaimed thus a hazardous waste once removed from the server because it can longer be used for its intended purpose without further processing. The canisters are being used as hazardous waste containers when they are removed and transported.